INTERNATIONAL CAPITAL MOVEMENTS AND CAPITAL FORMATION

BY

PAN YU-PU

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M.S., University of Illinois, 1946

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SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF DOCTOR OF PHILOSOPHY IN ECONOMICS IN THE GRADUATE SCHOOL OF THE UNIVERSITY OF ILLINOIS, 1948

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INTERNATIONAL CAPITAL MOVEMENTS AND CAPITAL FORMATION

Since the development of the concept of marginality, the criteria of using factors of production have been based upon their marginal productivity. Capital is generally accepted as the most mobile among the factors of production. The movements of capital undoubtedly have important effects on the marginal productivity of capital. Therefore, in studying the long-run aspects of capital, it is necessary to take international capital movements as an integral part of an adequate theory.

The scope of the present study is confined to the economic effects of international capital movements on capital formation in the lending and borrowing countries; with special emphasis on the relationship between two countries which are extremely different in their levels of production and industrialization, such as the United States and China.

The method used in this study is an alternation of theoretical and empirical analysis. Theoretical analysis deals with the patterns of uniformity in general, and empirical observation gives the justification of the logical deductions. In this study, the intention is to present first a general uniformity of the effects of international capital movements on capital formation, by examining the possibilities under certain postulates; then testing the theoretical patterns with empirical observations of each particular case in consideration. Concerning the method of equilibrium approach, this study depends first on the means of partial equilibrium and then is extended to a general equilibrium. Obviously, economic activity involves two phases—disequilibrium and restoration. The occurence of capital movements is sometimes a cause of disequilibrium, and at other times it helps with the restoration of equilibrium at a different level. The phase of disequilibrium is rather the rule than the exception. For the present study such disequilibria are dominant.

The concept of capital is studied from two different angles: the concept of capital used in connection with capital formation and that used in connection with capital movements. The various concepts of capital accepted by different writers are classified under four major categories: namely, capital is a

sum of money, capital is a stock of material goods, capital is the result of waiting, and capital is capital funds. These four categories are studied from the two different angles. The concept that capital is capital funds has been accepted by most modern economists in the first connection; but it has not been used so much in the second connection. This study intends to apply the concept of capital funds in connection with international capital movements as well as capital formation.

Capital as used in this study means capital funds representing the value of produced wealth which is supposed to be used directly in further production; while international capital movement means the transfer of such funds in various forms from one country to another. Approached from the consumers' point of view, saving is equal to national income minus consumption. Approached from the producers' point of view, investment is equal to the value of output minus goods which have been consumed. National income is equal to the value of output, and thus saving is equal to investment. Saving always represents floating capital, and investment means the state of capital which has been embodied in goods.

Investment is composed of three elements—capital goods, inventory of finished goods, and claims on foreigners. By capital goods we mean all goods produced for further production except those finished goods which are stored and ready to sell. They are counted on a net basis, so that present total capital goods are equal to the total of capital goods produced minus the total of depreciation. Inventories of finished goods are the net value of inventories, i.e., the difference in inventories at the beginning and the end of the period. The claims against foreigners are also recorded on a net basis; that is, the amount of the net increase (or decrease) in comparison with the preceding period. Each of these items can be positive or negative in a single period. The positive value of these items is capital formation. The summation of the total of the capital formations in various periods is capital funds at a certain time.

Factors which intimately connect with capital are verified individually. First is the problem of money on hand. Suppose money has been procured by the producers by selling their finished goods. The value of the products is just

enough and no more than enough to pay rent, wages, interest, and profits in producing goods. The value of these products surely has been counted in the value of output of the current period, and the different shares have been counted in the national income. Money in the producers' hands does not go through the value of output as yet; therefore it would not be counted as investment. When money is procured by borrowing, it is simply a means of transfer of ownership. By this transaction neither the value of output nor consumption could be affected. Therefore the investment must have remained the same. Secondly, there is the problem of hoarding. Hoarding is relative to the savings already in existence, and does not relate to potential savings. It would affect investment through the channel of influence on national income. Creating of money and dishoarding have opposite effects.

Lastly, there is the problem of the determination of the interest rate. The long-run interest is determined by the marginal efficiency of investment or the marginal reward of capital. The marginal efficiency of investment is dominated by the technique of utilizing capital goods and the amount of investment which has been gradually accumulated. The marginal reward of capital is always equal to the marginal efficiency of investment, and the curve of marginal reward of capital and that of the marginal efficiency of investment coincide. The short-run interest rate fluctuates rather irregularly. It shows ups and downs from time to time and place to place. It fluctuates, in general, around the long-run interest level. The short-run interest rate is confined and influenced by the long-run interest level, but it is not determined by the same forces. The short-run interest rate is determined by the demand for and supply of the floating capital in each period.

Eventually, the different causes of capital movements will give different effects on capital formation. The chief economic cause which calls forth international capital movements is usually a difference between the interest rates of two countries, which is large enough to outweigh the cost of transfer occasioned by the obstacles to such capital flows. The difference in interest rates between countries is usually due to the difference in the productivity of capital or the marginal efficiency of investment, which depends largely upon the relative quantity of investment and the quantities of the other factors of production, i.e., land and labor. The marginal efficiency of

investment is determined by the amount of investment in existence and the technique of utilization of capital. Theoretically, the real rate of interest is the ultimate deciding factor in connection with capital movements.

The long-run interest rate may be different in different countries in two ways. It is possible that the country which embraces the larger accumulation of capital and higher technique of utilization of capital has the higher interest rate, and the less developed country has the lower interest rate as well as efficiency of capital. But this situation would not be likely to cause movements of capital from the lower-yield area; because the knowledge of investment is as important as, if not more important than, the interest differential. Thus the only possibility for capital flow from the place where the marginal efficiency of capital is low to the place where it is high is in the case when the more economically advanced country has the lower marginal efficiency of capital. The conclusion is that, whenever capital movements are caused by differentials in the long-run interest rates, the net result is in all likelihood to benefit both lending and borrowing countries, in connection with capital formation.

Theoretically, international capital movements will tend to accelerate capital formation in two ways through the increase in national income. In the first place, the increase in national income in the borrowing country tends to increase directly the amount of saving, if other things remain unchanged. In the second place, the increase in national income in both countries tends to induce a larger demand for capital and labor which will cause a further increase of national income and saving. Any productive investment should be self-financed, or it is not productive. Under the condition that capital is exported, because of the higher yield, it is self-evident that this capital is or will be used in a productive way. In the short-run, the consumption in the borrowing country might be increased, because the people have previously under-consumed, but in the long-run, if it is productive, it must be self-financed, and beneficial for further capital formation.

Another important cause of capital movements is capital flight. The flight of capital is caused either by the fear of depreciation of the currency, by political uncertainty, or by high taxation of capital. In this case, capital flows in an uphill way. It flows from the place where the marginal effi-

ciency of capital is high to the place where it is low. The reason for doing this is to avoid risk rather than to seek a higher rate of return. The effect of this kind of capital movements is of a short-term character. It is not aimed at investment in any productive use; it usually stands idle in bank accounts. But such capital flight is a real capital movement and not an equalizing one. This real capital movement usually produces destructive rather than constructive effects. Capital flight always happens so suddenly that it will influence the economy of the capital-outflow country in different ways. As capital flows out, some production must be contracted, and the total national income will be decreased. It will also decrease total wages and rents in addition to the direct result of capital flow that decreases the gain of capitalists. Moreover, capital flight will increase the scarcity of capital and raise the interest rate. Over-estimated risk is the common attitude of capitalists; the higher interest rate will induce people to hoard or consume, or send further capital out. Capital flight does not do any good to the capital-inflow country either. The most important effect on the capital-receiving country lies in the fact that, because of the easy funds, the producers will probably expand their plants and use up more of other resources. If the funds stay in the country long enough, they will further lower the marginal efficiency of capital, and readjustment will take place. But flight capital usually leaves the receiving country as suddenly as it flows in. The sudden shortage of floating capital will raise the rate of interest and disturb the whole economy, as well as international trade and the balance of payments.

Capital movements can be classified in different ways. According to the source of capital they can be classified as involving public capital or private capital from the ownership point of view. According to the time when capital was accumulated, they can be classified as involving capital from past saving and from present saving. Each of these types has an effect on further capital formation in a different way.

By public capital we mean capital funds which are at the disposal of the public as a whole. After the factor of government is introduced into the discussion, the economy as a whole is separated into two components—private and public. Public capital and private capital exclude each other, no matter whether they are productive or not. The source of govern-

ment saving is a part of savings done by individuals, and they have been transferred from private hands to government either by taxation or by borrowing. In any given period the total of public savings and private savings is equal to the total of public investments and private investments. But it is not necessary for the government savings to be equal to government investment, or for private savings to be equal to private investment.

The effect of public capital movements, compared with private capital, on capital formation in the lending country can be approached by examining their effects on wealth distribution and the benefit or damage done to each income class. This comparison can be made through the effect of personal income taxes, corporation income taxes, and public borrowing; these three constitute the main sources of public capital.

A study of American families' savings-distribution and income-tax-distribution for the year 1935-36 and the year 1942 shows that public capital usually does not affect wealth distribution as much as had been thought, when the individual income tax is used as the means of procuring the public capital. No matter whether capital is provided by individual investors or by government, the net result is likely to be that the higher income groups provide most of the funds. Only when the repayment is made and the effects of changing tax burdens are evident does it make any difference to capital formation in the lending country whether the loans were made with public capital or with private capital.

Concerning the effect of foreign investment made with public capital obtained by the device of taxation on corporations' undistributed net income, from the international economy point of view it is a remedy pointed toward the obstacle impeding free international capital movements. From the national economy point of view, it releases the pressure of over-expansion and unbalanced economic development. The fundamental effect of corporation surpluses is important because modern industries are conducted under monopolistic competition rather than perfect competition. Under perfect competition, over-expansion of one or a few firms would not lead to an unbalanced expansion of the whole industry and disturb the whole economy. But under monopolistic competition the automatic mechanism of readjustment does not work. The surplus capacity is never cast off, and the result

is high price and waste.

If public capital invested in foreign countries comes from domestic public borrowing, there are two possible effects. Sometimes the funds are transferred to the foreign countries on the basis of relief or gifts, and thereby no interest and repayment are expected. In this case, public capital is not directly used for productive purposes. It is a kind of government spending, not investment. Such public giving accomplished through public borrowing would not achieve more than domestic public spending would, so far as employment and capital formation are concerned. Most of the time, however, the funds are transferred on the basis of investment. There are still two possibilities. If the funds are taken away from the lending country, the government saving will be increased by the same amount as the foreign investment, and the total savings remain unchanged. If the funds are spent by the borrowing country in the lending country, the national income of the lending country will be increased by that amount. If they are spent on capital goods, other things being equal, the investment is siphoned in the lending country from capital goods to the claims against foreigners. Saving will be increased in the item of private savings. After the public borrowing is deducted, the net saving will remain the same.

Regarding the problem of repayment, public funds procured from borrowing will be preferable to those from taxation. As in the former case, it is possible that the borrowing from home and lending to foreign countries are arranged in such a way that the interest and principal payments are made as if they were directly from the foreign countries to the individuals in the lending country. The government acts only as an agency between them. In balancing all the advantages and disadvantages, the conclusion can be drawn that, whenever private capital is available, private capital should be encouraged and regulated. But in case private capital is not adequate, public capital should be used instead. The objections to public capital in foreign investments are not so distressing as they appear.

Another comparison of the types of capital has to do with past saving and present saving. Capital which comes from past saving is usually a kind of surplus saving as a result of the amount of savings exceeding the demand for them. Ob-

viously, surplus saving is associated with forced saving on two occasions: either in case of an upswing of the business cycle or in the case of unbalanced wartime production and consumption relationships. It occurs at the time when business is in expansion in such a way that in the later stages of an expansion people begin to spend a larger proportion of their available income than in the earlier stages. The consumption goods industries may draw labor and capital away from the capital goods industries and so create difficulties for them. The marginal cost of production increases, because of the increasing scarcity of agents of production. The liquidity of funds declines, banks will contract credit, and individuals will begin hoarding. Then surplus savings emerge.

In the postwar period, surplus saving is likely to be the result of fiscal forced saving, which results from the wartime rationing policy. In order to control wartime inflation, a government may resort to general expenditure rationing, making it impossible for the people to spend as much as they like. and, at the same time, in financing the war, individual income as well as the national income is increased. The discrepancy between income and expenditure constitutes the surplus savings.

The significance of these surplus savings is found in their influence of the future decisions of both consumers and producers. It is not that consumers will use their surplus savings in purchasing, because purchasing is still done with current income, and the greater part of savings is embodied in government securities or in liquid savings. Due to the liquidity of the surplus savings, consumers will demand more goods than they otherwise would. On the other hand, the production of goods does not increase as rapidly as the demand in the period right after the war; therefore the existence of surplus savings will give an inflationary effect. Capital outflow would spread the heavy demand for consumers' goods over a longer period, and it would certainly ease the situation. Capital which comes from present savings invested in foreign countries would not give the benefit as obviously as that from past savings.

Whatever the cause or the type of capital movements is, the result will depend partly on the method by which the capital is transferred. Among various phases of the problem of transfer, those that will be mentioned here are the mech-

anism of transference and the method of transfer. Concerning the mechanism of transference, there are two theories—the classical and the modern. In connection with the influence of capital transference on income and spending, the classical reasoning assumed no change in the quantity of money or the prices of domestic commodities in the two countries, which implicitly results in the "fixity of the total income" and unchanged "total spending power." The modern theories insist that the transfer of capital is a transfer of purchasing power from the lending country to the borrowing country. The short-term credit usually acts as the equalizing means for the transference. The transfer of purchasing power will influence the commodity trade and the rate of exchange. But because of the accompanying credit expansion the effect will be minimized.

In this study we accept the concept of capital as capital funds, and the transfer of capital is no doubt a transfer of such funds. The problem should be approached through the domestic economy from three different angles. First, when the funds are wanted by the borrowing country for expenditures at home, the greater efficiency comes when the flow of short-term claims to the capital-importing country matches the process of capital construction there. The changing of interest rates serves as a criterion of the speed of transference. If the transfer of short-term capital follows the course of economic development, the interest rate will remain rather steady.

When the transfer is made with consumption goods, the most benefit would be obtained in the lending country where any particular consumption goods are overproduced. The transfer of such goods abroad will help to maintain the level of employment and the level of national income. For the borrowing country, the transfer of consumption goods can be justified when the goods are urgently needed for keeping up necessary production, or when the imported goods do not compete with native products. Thus the transferring of goods will achieve the aim of international division of labor and better utilization of agents of production.

When the transfer of capital is carried out by transfer of capital goods, the effect would be different. Owing to the fact that the level of industrialization of the lending country differs widely from that of the borrowing country, by the

movement of capital goods both countries are likely to be benefited.

In general, these three means of transference usually go together. The best distribution of the proportion among them, especially the transfer of capital funds and capital goods, will accelerate the process of capital formation. The transfer of funds means to utilize domestic agents of production in the borrowing country, and the transfer of goods means to transfer foreign agents of production which are embodied in goods through the process of production. Capital goods are eventually the past investments, and the value of them is capital funds. Whenever capital goods are transferred, the value of them is capital which is imported into the borrowing country. A right combination of imported capital goods and the means to utilize domestic land, labor, and capital will certainly give more satisfactory results.

The methods of transfer can be grouped into bilateral and multilateral methods of transfer. The criticisms of the bilateral transfers are: First they easily lead to political conflict. Secondly, they may prevent the full utilization of capital. Thirdly, they may lead to discrimination among borrowing countries. Thus capital often fails to meet the most urgent need. Lastly, they may influence the borrowing country's economy through the economic condition of the lending country, especially during the ups and downs of business conditions in the lending country. In order to avoid these handicaps, the multilateral capital movements are suggested. The International Bank for Reconstruction and Development is established for this purpose. In practice, many points should be considered if the aim of multilateral capital movements is to be attained.

A special study of the role of foreign capital in the economic development in China is made. There are two ways for China to finance her economic development; they are either to rely on her own resources and wait until sufficient capital has accumulated, or to obtain the necessary capital from abroad.

The capacity of capital formation in any country can be determined by studying the level of income, level of consumption, and the capacity of raising savings. The level of income in China is low. Even in the prewar period, the average per capita income per year was about $40 while in the

same period the average per capita income in the United States was $540. In China and the United States in the same period, the per capita consumption was $36 and $404, and the per capita saving was $4 and $135 respectively. The extremely low level of income and consumption causes low standards of living. Out of the total expenditure in China, over sixty percent was spent on food. And the quality of food consumed was poor. Since the war the situation is worse. It is clear that, for China to rely on her own resources to increase national income or to reduce consumption, is difficult.

Another possibility to increase the supply of capital is through the devices of monetary and fiscal policy, such as forced saving. The prerequisite of the device of forced saving is the elastic demand for goods. If the elasticity of demand is larger than unity, a forced-saving policy would reduce the amount of consumption and increase saving. But when the demand for goods gets into such a stage that the elasticity of demand has reached a minimum, imposing a forced-saving policy would not increase saving very much.

The approximate estimate of China's capacity of raising domestic capital shows that the individual investment was 630 millions, corporation investment 211 millions, and government investment 344 millions of prewar Chinese dollars. Converted into American dollars, it amounted to $393,775,000 per year. There is no doubt that it was far from enough to carry out an economic development.

From a general study of the effect of war and industrialization it seems clear that the best chance for China to hasten her industrialization is in the post war period. The capacity of absorbing capital depends on the amount of capital which has been invested and the technique of utilizing capital goods. During the process of industrialization, the demand for capital would increase at an increasing rate. The productivity of capital determines the demand for capital which in turn determines the size of investment in each period. Investment of the preceding period together with the technique of utilizing capital goods determines the productivity of capital. They are in a vicious circle, but they are not around the same circle. The circles are piled up as a reversed pyramid. They get larger and larger and the level of industrialization gets higher and higher. Thus the flow of foreign capital should

be at a progressive rate and follow a gradual schedule.

During the long years of war, achievement in industrialization in China has been observed. The fact can be proved from the development in transport and industries in free China. Therefore, either from the specific point of view or theoretical point of view, in the post war period is the time for capital inflow. The utilization of capital at this time will be better located with less resistance. Immediately after the war China made efforts in this direction. About 88.35 million dollars of loans were negotiated (excluding the recent $400 million aid) and 855 million dollars of wartime supplies were transferred to China. All of these are signs of the efforts made toward industrialization.

The efficiency of capital depends also on the method of utilization of such capital. Foreign capital is different from domestic capital in various aspects. Above all, from the national economy point of view, foreign capital involves the problem of repayment, while domestic capital does not. The difference in character between foreign investment and domestic investment leads to a difference in the utilization of foreign capital and domestic capital, especially when foreign investments constitute a substantial part of total investments. The ideal utilization of capital should be such that the greater part of foreign loans should be appropriated to essential purchases of capital goods abroad and expenditure thereon. The cost of domestic materials and wages should be paid off from domestic sources. This doctrine is sound from both the debtors' and creditors' point of view. In the creditors' country, savings are used to buy its own products; the demand and supply of capital will not vary rapidly and the level of employment will be kept high. In the debtors' country, by the aid of imported capital goods the total national income will be increased. And by using the domestic saving to finance domestic spending, the balance of economic development would be attained. In the years following the war, there is no doubt that domestic capital in China will be more scarce than foreign capital, and a part of domestic spending has to be financed with foreign capital. As the years pass by, the proportion of domestic savings financing domestic spending should be increased, until it is enough to be self-sufficient.

Regarding the problem of repayment, the emphasis should be put on the phase of capital funds and their relation to

capital formation. If a country has a certain domestic capital and certain foreign debts, the repayment can result from three different possibilities. The debts can be repaid on maturity by means of a new foreign loan. The debts can be repaid out of a country's current savings. The debts can also be repaid partly by contracting a new loan and partly by depending on domestic savings. The variation of the means of payment is evidently a result of the utilization of foreign funds. The ideal method is perhaps the last one. By this method of repayment, the supply of capital will be increased and the foreign debts will be reduced correspondingly. The effect on the creditors' and borrowing countries' economy will be reduced, and the process of accumulation of capital will be steadier than at either of the two extremes.

In conclusion, international capital movements have a direct effect on further capital formation in lending and borrowing countries, not only through the channel of international trade, but also directly through the reaction of the internal economy. This effect is easy to see when we accept the concept of capital as capital funds. The comparative productivity of capital in borrowing and lending countries serves as a criterion of the efficiency of such movements. Verifying the possibilities by which international capital movements come forth, we are aware that in the long-run the most successful foreign lending and borrowing is that which is based on economic principles. International lending does not necessarily mean a reduction of productive power in the remitting country; nor does borrowing mean definitely an increase of it in the receiving country. It depends on so many factors that a generalizing study only throws some high lights. Specific studies are needed in particular circumstances.

VITA

The writer of this monograph was born October 17, 1914, in Mukden, Liaoning, China. She entered National Northeastern University in 1934 and secured her B.S. degree in 1938. For the ensuing two years she was assistant in the same university. In the fall of 1940, she entered Nankai Institute of Economics, where she did research work for more than four years. She came to the United States and entered the University of Illinois in March 1945, and received her Master's degree in 1946. The title of her thesis was "A Comparative Study of the Theory of Interest." During the last year she has been engaged in the preparation of the present monograph.